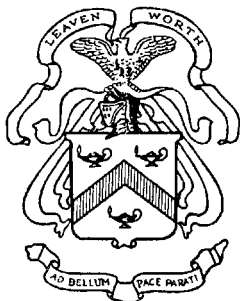


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**THE CAMPAIGN  
IN POLAND  
1939**



**DEPARTMENT OF MILITARY ART AND ENGINEERING  
UNITED STATES MILITARY ACADEMY  
WEST POINT, NEW YORK  
1945**

**28 MAY 1949**

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## FOREWORD

This account of the campaign in Poland has been written for use in the instruction of cadets at the United States Military Academy. It is based for the most part on material prepared by the Military Intelligence Service, War Department. However, while acknowledging the great indebtedness to the M. I. S., it is not desired to place on it the responsibility for any factual errors, or for any conclusions drawn.

*July, 1941.*

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## THE CAMPAIGN IN POLAND, 1939

### INTRODUCTION

Most military men emerged from the First World War with a belief in the impossibility of a future European war of maneuver. They thought the theater too limited and the defensive too strong to permit new wars to be other than tests of endurance. Most Continental nations, accepting their soldiers' new doctrine and being satisfied with the Versailles boundaries, devoted their military energies to constructing defensive lines instead of developing new offensive weapons and tactics.

Only Germany failed to adopt these new beliefs. Refusing to accept a doctrine that gave no possibility of regaining her lost provinces, she continued to cling to the teachings of Clausewitz, who had written:

If the defensive is the stronger form of conducting war, but has a negative object, it follows of itself that we must only make use of it so long as our weakness compels us to do so, and we must give up that form as soon as we feel strong enough to aim at a positive object. . . . A war in which victories are merely used to ward off blows, and where there is no attempt to return the blow would be . . . absurd.

Let us not hear of generals who would conquer without bloodshed. If a bloody slaughter is a horrible sight, then that is ground for paying more respect to war, but not for making the sword we wear blunter and blunter by degrees . . . , until someone steps in with a sword that is sharp and lops off the arm of our body.

Basically, Germany's superiority has been due less to German development of the two modern weapons, the airplane and tank, than to the strategic doctrine which limited Allied production. The Allies might have outdistanced Germany had their plans contemplated offensive action. All too soon, the Allied plan of a "bloodless war" was shattered by that one nation which clung to the age-old principle of the attack. Too late, the victim nations realized that, through neglect of the possibility of maneuver, they had failed to keep pace in the production of the most vital war equipment. Through subscription to a false doctrine, they had allowed their "sword" to become "blunter and blunter by degrees" until Germany could step in with a sharper weapon.

Poland, with the fifth largest army in Europe, was the first nation to feel the attack of the rejuvenated Nazi war machine. Because of later German conquests, the world has largely forgotten this initial success. Yet in one respect the rapid annihilation of the Polish Army was Germany's most important conquest. This campaign demonstrated to Germany, if not to the rest of the world, the correctness of her military doctrine. It furnished the proving ground for her organization and weapons.

The rapidity of Poland's complete destruction came as a shocking surprise to the world at large. Eight days after the beginning of the war, all Polish forces were in demoralized retreat; and a month later, the entire fighting force of a million men had been annihilated. Military history offers no prior example of a conquest so rapid and complete. In this victory the new German air and mechanized forces played an unprecedented part. Nevertheless, it would be wrong to say that German success was due to these two arms alone. Simply stated, Germany's stupendous conquest may be attributed to the superiority of the entire German Army over the outmoded Polish war machine. Germany's balanced, well-trained, and ably led forces found no match in those of her smaller rival.

### COMPARATIVE FIGHTING STRENGTHS

Potentially, Poland as a nation could never be a match for the newly armed Nazi might, backed by the tremendous German industry, rich resources, and plentiful reserves. Poland's near bankruptcy and industrial backwardness would always hamper greatly any modern armament program. She possessed a fairly large iron and steel industry, an oil output of one eighth her peacetime needs, and a newly created, but small, airplane industry. In all other production necessary for a modern war, including the manufacture of automobiles and trucks, she was totally lacking. With agricultural produce her only exportable surplus, her international credit was low. Thus, lack of home production caused her to maintain equipment long considered obsolete by most major powers, while limited purchasing power compelled her to accept any foreign equipment she could buy. Further, the poor Polish road net, the famous Polish mud, and the local abundance of good horseflesh caused her military leaders to overemphasize the importance of horse cavalry and transport. The result was such that the outbreak of war found Poland in possession of an army patterned closely after those of the First World War.

With Hitler's ascent to power in 1933, Germany had inaugurated a program designed to train and arm a fighting force second to none. In 1935, she had resumed universal training. By the summer of 1939, she had succeeded in training 2,500,000 of her 86,000,000 population, and had available equipment reserves for more than twice that number. Approximately 900,000 of those trained were members of the active Army, 200,000 were in the active Air Force, while 1,400,000 had completed their two years of service and had been released to the reserve. In addition, Germany had within her borders 1,700,000 men who had seen active service in the First World War. The members of this latter group, though relatively unfamiliar with the technique of modern weapons, were capable of rapid and easy conversion to first-line troops.

Germany's peacetime Army consisted of 35 horse-transport infantry divisions, 3 mountain divisions, 4 motorized divisions, 5 heavy mechanized (panzer) divisions, and 4 light mechanized divisions. These were grouped into 18 corps and 6 armies. On 1 September, Germany had 90 peacetime and reserve divisions ready for active operations. Sixty of these had been concentrated for the Polish campaign. The mobilization of some 50 to 60 additional divisions was either in process or was begun immediately. It appears that none of these were considered fully fit for field operations during the first month of the war.

The basic fighting unit of the German Army was the more numerous horse-transport infantry division. This division was triangular in form—three infantry regiments of three battalions each—and had a strength of 15,261 officers and men. The fire power of the division was tremendous. It contained 342 light and 100 heavy air-cooled machine guns, 81 light infantry mortars (50-mm.), 54 heavy infantry mortars (81-mm.), 72 antitank guns (37-mm.), 18 infantry howitzers (75-mm.), and 6 infantry howitzers (150-mm.). Of these weapons, 12 of the antitank guns, 27 of the light and 12 of the heavy mortars, 6 of the 75-mm. howitzers, and 2 of the 150-mm. howitzers were organically assigned to each regiment.

Artillery support for the division was provided by three battalions of light and one battalion of medium artillery. All light-artillery battalions were composed of twelve 105-mm. howitzers, while the medium battalion contained two batteries (8 pieces) of 150-mm. howitzers and one battery (4 pieces) of 105-mm. guns.

Germany had about 6,000 tanks. Three quarters of these were organized into panzer and light mechanized divisions. The remainder were formed into a number of GHQ tank regiments, to be used for close infantry support. The panzer division, with its



strength of about 14,000 men and 3,000 vehicles, was organized into three echelons: a reconnaissance force, a shock force, and a ground-holding element. The reconnaissance echelon contained a motorized reconnaissance battalion of 50 armored cars, a motorcycle infantry company, and certain supporting weapons. The second echelon consisted of 450 tanks organized into two tank regiments, each of which contained both light and medium tanks. The ground-holding echelon contained one motorized infantry brigade of two regiments, an artillery regiment, and certain engineer, antitank, and signal troops.

The German motorized division was identical with the horse-transport infantry division, except that motor transport was furnished for all men and equipment and a mechanized reconnaissance battalion was added. The infantry themselves were transported in four-wheel-drive light trucks. The heavy infantry weapons—heavy machine guns, mortars, infantry howitzers, and antitank guns—were transported in or behind one-ton half-track trucks. These vehicles, with their low silhouette, excellent road speed, and cross-country mobility, gave considerable tactical mobility to the unit.

A difference between the German Army of 1939 and that of 1914 was the function and quantity of horse cavalry. At the outbreak of war in 1939 Germany had only one two-regiment brigade of horse cavalry, located in East Prussia. This was later expanded into a cavalry division. There were approximately fifteen independent cavalry regiments, located in Germany proper and trained as reconnaissance units. Each independent regiment was organized so that upon mobilization it could be split up into reconnaissance detachments or troops of 300 men each for the infantry divisions. In addition, each infantry regiment was given a mounted reconnaissance platoon.\*

By the summer of 1939, Germany had achieved her dream of an Air Force second to none. Through the means of flying and soaring clubs, as well as more formal civil and military training, she had built up a reserve pilot strength of approximately 100,000. Her potential production was estimated as high as 2,000 airplanes per

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\* For corps and armies, the reconnaissance units were motorized. The same was, of course, true for the reconnaissance units of motorized divisions. A report dated 22 September, 1941, states that the cavalry division was being converted into a motorized division, and that the only mounted units then in the German Army were the platoons assigned to infantry regiments. Apparently the mounted detachments assigned to divisions had been abolished. A later report, dated November 22, 1941, states that the conversion of the cavalry division to a motorized division was postponed and that the division operated as horse cavalry on the Russian Front as late as October, 1941.

month. She possessed a fighting force of 7,000 first-line planes, organized into four air fleets. In addition, she had available parachute and air infantry, whose use she postponed till a later campaign.

Poland, with her population of 34,000,000, had an active Army of 266,000 and partially trained reserves of nearly 3,000,000. Owing to prior mobilization, 600,000 were ready and available on M day, while an additional 400,000 were mobilized before the campaign ended. Howing, owing to the rapid German advance and the immediate destruction of Polish railroads, most of the latter took little part in the combat. Except for an estimated two divisions, they were thrown into battle by regiment or smaller unit when the situation became desperate.

The 600,000 men already mobilized were organized into 30 infantry divisions, 12 independent cavalry brigades, and certain army, corps, and special troops. The Polish infantry division, though nearly equal to the German in man power, was woefully weak in supporting weapons. Its light and medium artillery consisted of a heterogeneous lot of 75-mm. and 105-mm. pieces. Although 45 light antitank guns were authorized for each division, only about half were on hand on 1 September. Only 200 light and 200 heavy anti-aircraft guns were available to the entire Army.

Poland's Air Force, a part of the Army, contained 900 first-line planes and about 600 in second line. All were of a design greatly inferior to those of her opponent. Her mechanized strength consisted of 600 well-designed light tanks, organized into one tank brigade and several independent regiments.

Man for man, the Polish soldier has always been an able opponent of any foe he has met. On many fields and under many flags, his ancestors have demonstrated their bravery and endurance. In 1939, the average Polish soldier was fairly well trained, could march long distances, and was possessed of a high morale. Company officers had reached a high degree of efficiency and were uniformly well considered. Above the company, however, the Polish command was questionable. Limited schooling, lack of large-scale maneuvers, political influence upon promotion, and an outmoded strategic doctrine, all combined to make the higher officers compare unfavorably with the Germans of like grade.

Very little has yet been published on the detailed Polish command and staff organization. It is known, however, that no group\* com-

\* The Poles called their field armies "groups".

manders existed in peacetime, and that upon mobilization the Polish chain of command included no link between the group and the division. Smigly-Ritz, the commander in chief, was a virtual dictator, controlling the country's political as well as military affairs. Since successful operation in wartime necessitated extreme decentralization of command, able staffs and group commanders familiar with their duties should have been available to absorb some of the many duties which otherwise would fall upon GHQ. The results of the war indicate that such was probably not the case.

Since 1933, Hitler and his subordinates had done all in their power to improve the stamina, training, and morale of the manhood of Germany. Youth organizations, mass civilian drills, group calisthenics, and organized athletics raised the physical endurance of the nation as a whole. The work battalions and universal military conscription furthered this physical development and added discipline and military training. Service with the armed forces, even in peacetime, became a serious business. Military housekeeping and administration by the troops themselves was cut to a minimum. The training program provided for ten hours of drill and instruction for six days a week. There were frequent forced marches and extended maneuvers under simulated war conditions. The German trained reserves and the men of the active Army and Air Force were without peers in the military world of 1939.

The officer corps of the German Regular Army has long been recognized as the greatest stabilizing influence in the German nation. To be a member of that class has always been considered a high honor. This corps, while small between 1918 and 1932, maintained its traditions of efficiency and devotion to duty. Only men of good family, long military experience, and demonstrated ability could hope to receive important command or staff assignments. The high command had repeatedly been given the opportunity to handle forces as large as 100,000 in the annual fall maneuvers. In addition, much valuable command and staff experience had been gained when Austria and Czecho-Slovakia were overrun. That the German commanders in the higher grades proved their worth when real war began is shown by the fact that two years later those who had been the senior commanders in the Polish campaign still held the key positions.

At the beginning of the invasion of Poland there was doubt in the minds of many regarding the efficiency of the junior leaders, most of whom were reserve officers. However, they proved to be quite satisfactory.

In the following table are listed the principal commanders during the Polish campaign:

COMMANDER IN CHIEF .....	HITLER
Chief of Staff .....	Keitel
ARMY .....	Von Brauchitsch
Chief of Staff .....	Halder
Southern Group of Armies .....	Von Rundstedt
Eighth Army .....	Von Blaskowitz
Tenth Army .....	Von Reichenau
Fourteenth Army .....	List
Northern Group of Armies .....	Von Bock
Third Army .....	Von Kuechler
Fourth Army .....	Von Kluge
AIR FORCE .....	Goering
Air Fleet One .....	Kesselring
Air Fleet Four .....	Loehr
NAVY .....	Raeder
Naval Units in Polish Campaign .....	Albrecht

That these men, without exception, measured up to their tasks, speaks volumes for the German system of training and selection. One advantage that a number of them had was their knowledge of the Polish theater. Von Brauchitsch had been the commander in East Prussia in 1936, with von Kluge as his chief of staff. Von Kuechler was in command there at the outbreak of war. Von Rundstedt arrived on the Polish border some months before Germany attacked. Von Reichenau had once been in command of the Königsberg garrison.

Two features of German military organization are of particular interest. First, the German military machine consists of three separate arms: the Army, the Navy, and the Air Force. To gain proper coordination, Hitler's chief of staff, Keitel, controlled all three. To insure cooperation on the Eastern Front, von Brauchitsch commanded all elements of the Navy and Air Force that were used against Poland. Second, the seacoast defenses are under the Navy, while the anti-aircraft artillery is controlled by the Air Force.

Poland might have increased the fighting power of her inferior Army through the construction of a detailed system of permanent fortifications, had it not been for Hitler's able political strategy. In 1934, Poland and Germany signed a non-aggression pact. Because of this and her limited resources, Poland for the next five years devoted her means to the construction of a fortified line on her Russian border (Map 1). In April of 1939, when war became imminent, she trans-

ferred her energies to the vital Narew, Vistula, Warta, and Upper Silesian lines, but Hitler did not wait for these fortifications to be completed. Germany, having misdirected her future enemy, proceeded to build a fortified zone near Frankfurt, for the protection of Berlin, a "pillbox" line on the East Prussian frontier, and the powerful West Wall, which effectively guarded her western frontier.

### GERMAN PLANS

On 1 September, 1939, when Hitler released his forces against Poland, he was following a basic strategic principle of von Schlieffen—for Germany to eliminate quickly and completely one hostile front so that she might turn with her full strength against her other enemies. The Allied Powers had been seriously frightened by Munich, and England was beginning to rearm. A dangerous military union of England, France, Yugoslavia, Rumania, and Poland was threatening to develop. It was time for Hitler to seize the initiative and gain the advantage of surprise. That he decided to attack Poland instead of France in 1939 may be attributed to many factors, some of which were:

1. A quick decision could be reached in Poland.
2. The West Wall could hold longer than the German fortifications in the East.
3. The Allies probably could not be ready to act before Poland could be destroyed.
4. The Maginot Line might delay an offensive against France long enough to allow the Poles to attack the German rear.
5. A quick victory in the East might have a tremendous effect upon the future actions of Rumania, Yugoslavia, and Hungary.
6. The elimination of Poland would allow an easy flow of Russian goods to Germany.

Poland, as a theater of war, was admirably suited to the capabilities of the modern Nazi war machine. A vast plain, 300 to 1,000 feet above sea level, extends north to the Baltic from a line through Cracow and Lwow. At only three points within this plain are there elevations above 2,000 feet: the Lysa Gora Hills near Radom, an uneven plateau between Czestochowa and Cracow, and a spur of the Carpathians reaching north through Lwow to Lublin. On the southern border is the only major terrain obstacle, the High Tatra and Carpathian Mountains, rising to heights above 8,000 feet. Cutting through these mountains from Slovakia are two major

passes, the Jablunka and Dukla, at 1,800 and 1,650 feet respectively, and a third somewhat higher and narrower pass south of Nowy Sacz.

During most of the months of the year the broad, gentle rivers of Poland are formidable obstacles. In September and October, however, rains may or may not follow the long summer drought. In 1939, the autumn rains did not arrive until after the Germans had completed their advance. The rivers, as a consequence, were extremely shallow, even the Vistula being fordable at many points above Warsaw. The Polish mud, made famous by Napoleonic campaigns and the First World War, failed to materialize. German mechanized divisions, which might have been partially bogged down for days, swept easily over the dry, level plains.

In general, the German plan (Map 2) was to be an application of the principle of "Cannae," as expounded by von Schlieffen. Eighty per cent of Germany's fully mobilized strength, to include all of the motorized and mechanized divisions and two air fleets, was concentrated on the Polish border before the attack. A light center, resting upon the fortifications of Frankfurt, was to defend in place; while two strong wings were to penetrate the dispersed enemy defenses and envelop the Polish divisions. Further, and contingent upon the success of the primary envelopment, a secondary envelopment was to be inaugurated to trap any enemy units which might escape the primary attack.

One glance at the map of Poland will show how admirably suited was such a plan to the Polish terrain. Most of the country's heavy industry was centered in an area between Teschen and the Wisloka River. Lodz was Poland's greatest manufacturing city, and Gdynia was her only outlet to the sea. West of the Vistula, Poland was relatively wealthy; but east of that river the land is poor and was sparsely populated. To the German GHQ it appeared probable, therefore, that the Poles would hold as long as possible a forward position along their weak, six-hundred-mile western frontier. In fact, the German high command had received information of a Polish concentration plan which contemplated using all divisions along the border. Nazi troops in East Prussia and German-held Slovakia would be well on the flank of any such forward position.

Germany's detailed plan contemplated that the Tenth Army of von Reichenau and the Third Army of von Kuechler would deliver the main attacks of the primary envelopment, directing themselves toward the area between Warsaw and Siedlce. On the north flank, von Kluge was to push rapidly across the Corridor, protecting von

Kuechler's right. He was to make contact with von Kuechler near Graudenz and was to reinforce the latter's army with some of the elements of the Fourth Army. Blaŝkowitz and List were to push forward to protect the flanks of the southern pincer. List, in addition, was to have the mission of enveloping, without destroying, the industrial area of Teschen, Cracow, and Tarnow. To execute this secondary mission, he was to direct a main effort from Marisch Ostrau toward Cracow, to be met by successive drives from Slovakia through the mountain passes near Neumarkt, Nowy Sacz, and Sanok. Still further, he was to move as rapidly as possible to the vicinity of Lwow and there block the retreat of the enemy into neutral Rumania.

The execution of the secondary double envelopment was to be extremely flexible as to time, place, and forces engaged. Its scope was to depend on Polish reaction to the primary envelopment. Units were to be concentrated as rapidly as possible near Johannisburg and Lwow for use in this later phase of the attack.

Many reasons have been advanced for Germany's having used two separate envelopments instead of a single attack whose pincers would join well to the east of Warsaw. Probably the principal consideration was Germany's inability to concentrate sufficient forces in East Prussia and Slovakia prior to the attack. Though some reinforcements were brought into East Prussia before the outbreak of hostilities, others had to be transferred across the Corridor as the advance progressed.

## POLISH PLANS

The detailed Polish plans have not as yet become known; so their exact nature is still the subject of much argument and doubt. From the original dispositions, it appears that, desiring to hold as long as possible her richer western terrain, Poland adopted a cordon defense of her thousand-mile border. It is possible that she planned a delaying action if pressure on her border position became too great, with the intention of taking up a final position behind the strong Narew-Bug-Vistula-San River line. There is also some evidence to indicate that Polish cavalry planned a diversion from the Posen salient on Berlin.

Polish plans for defense contemplated the formation of six groups of divisions, each group being roughly the equivalent of a field army. The 30 infantry divisions, 10 cavalry brigades, and one mechanized brigade which were available at the outbreak of war were all assigned

to the six groups. Smigly-Ritz evidently planned to create his general reserve from divisions not yet mobilized. When the German Air Force disrupted the mobilization of these divisions, he was left without a general reserve.

The initial dispositions of the six groups of the Polish Army are shown on Map 2. Only two cavalry brigades were left along the eastern frontier to observe the Russians.

Until the last moment the Poles expected aid from France and England. They hoped for a determined diversion, such as the self-crucifying attacks of Russia in the First World War. The Allies were ill-prepared for such an effort; and, except for the half-hearted French advance into the Saar, no attempt was forthcoming.

## OPERATIONS

**The Break-Through, 1-5 September (Map 3).—**At 5:00 A. M., 1 September, 1939, the German armies struck.

In the south, the Fourteenth Army (List) aimed a double blow at Cracow. One attack group struck east from Marisch Ostrau; a second moved northeast from the Zilina area via Neumarkt. By 5 September, these groups had broken the resistance opposed to them and had made contact near Cracow, and on this same day a third attack group from List's army advanced north from Zips on Nowy Sacz. Their action, combined with a deep penetration by the Tenth Army to the north of Katowice, rendered the important Upper Silesian industrial area untenable, and its hurried evacuation by the Polish troops precluded any effective destruction of its mines or factories.

The strong Tenth Army (von Reichenau) consisted of at least two corps composed of infantry divisions and of two mechanized corps, the latter being the XVI of Lieutenant General Hoepner and the XV of General Hoth. This army concentrated its forces along the Silesian-Polish frontier between the towns of Kreuzberg and Tarnowice. One of the mechanized corps was on its left flank. Additional active and reserve divisions were disposed in rear to give depth to this the main-attack force of the German offensive.

The advance of the Tenth Army was opposed in its initial stages by four Polish infantry divisions and one cavalry brigade.\* These troops were concentrated close to the frontier. Part were behind the half-completed pillbox line of the Warta River; part were in the area west of Czestochowa. The remaining four divisions of the Polish Silesian Group were far to the east and out of supporting distance.

\* Another Polish division was on the frontier initially, but apparently retired northeastward without opposing the advance of the Tenth Army.



Striking hard along its front, the Tenth Army quickly overran the Warta line and captured the city of Czeszochowa. The mechanized corps on its north flank reached Radomsko, a town 50 miles from the frontier, by 3 September. This advance outflanked the Polish defenses to the south, along the Warta, which were being attacked frontally by the infantry of the Tenth Army. Portions of the mechanized corps struck south and enveloped this resistance. By 4 September, the Polish front opposite the Tenth Army was disintegrating. Three divisions retreated toward Tomaszow Maz, and one toward Lodz. The remaining division of the frontier forces was encircled and annihilated near Czeszochowa.

The retreat of four of the Polish divisions to the northeast and the annihilation of the division near Czeszochowa created a gap in the Polish front. Through this gap raced the two German mechanized corps. By evening of 5 September, they reached the line Piotrkow-Checiny, closely followed by the infantry moving by forced marches.

The Polish Silesian Group had lost all cohesion. One division had been destroyed. Four were withdrawing northeastward, while the remaining four, initially in reserve, were withdrawing eastward towards the security afforded by the Vistula River. The Tenth German Army had won a tactical success of the first magnitude and had advanced 70 miles in five days.

The Eighth German Army (Blaskowitz), much the weakest of the southern group of armies, concentrated its forces in middle Silesia between Trebnitz and Kreuzberg. Its mission was to protect the north flank of the Tenth Army. Having disposed its divisions in echelon to its left rear, to guard against a possible Polish thrust from the direction of Posen and Kalisz, this army pushed aside the single Polish division on its front and by evening of 5 September had captured Zdunska Wola and had established bridgeheads to the east of the Warta River from which its further advance toward Lodz could be launched.

The Fourth Army (von Kluge) effected its concentrations prior to 1 September in two groupings. The stronger, consisting of three corps, was drawn up along the German frontier in the area around Schneidemuhl and faced the broad base of the Corridor. A weaker corps concentrated in the vicinity of Butow, opposite the seacoast section of the Corridor.

Von Kluge's mission was to reduce the Corridor in the shortest possible time by an advance with the bulk of his army to the Vistula River between Bromberg and Graudenz. He was then to effect a crossing of that river on both sides of Chelmo and continue to advance in the direction of Modlin and Warsaw.

The main effort of the Fourth Army was to be made by the II Corps under General Strauss, consisting initially of three divisions in first line and several more in reserve. Its south flank was secured by a weak corps. On its north flank was a mixed corps of mechanized and motorized divisions under General Guderian, the peacetime inspector of the German mechanized troops. This main effort was to be supported by a supplementary attack by the XXI Corps of von Kuechler's Third Army, which had been given the independent mission of attacking Graudenz. The combined attack was intended to pinch off the Corridor and cut off all Polish troops that might remain there.

The attack of von Kluge's army proved extremely successful. By 4 September, the line of the Vistula and Netze Rivers between Marienwerder and Naklo had been reached. This rapid advance, which trapped some 25,000 Polish troops, had been materially aided by the bold movements of General Guderian's mechanized corps operating on the north flank. Here the 3d Panzer Division opened up a five-mile gap in the Polish line and, without regard to the security of its flanks, pushed speedily on to the Vistula River.

The advance of the German corps from Butow into the maritime region of the Corridor encountered strong resistance from Polish reserve and naval shore formations. The fighting in this area, although not of any strategic importance, was of an extremely fierce nature. It was not until 15 September that the Germans occupied Gdynia, and the Hela peninsula held out until 1 October.

Following the crossing at Chelmo on the night of 4-5 September, the Fourth Army pushed out strong bridgeheads and made contact with the XXI Corps near Graudenz.

The Third Army (von Kuechler) concentrated its main forces prior to 1 September in the area Osterode-Neidenburg-Allenstein, preparatory to breaking through the Polish fortified lines on both sides of Mlawa. It was then to push its advance southeastward over the Narew and Bug Rivers to the area east of Warsaw. The occupation of this area was the principal army objective.

As already noted, the XXI Corps of the Third Army was given the mission of capturing Graudenz, thereby assisting von Kluge's army in closing the Corridor. This task was completed on 5 September, and contact was established south of the city with units of the Fourth Army.

The main-attack force of von Kuechler's army, consisting of three infantry divisions, one panzer division, and one cavalry brigade, plus a number of reserve units, concentrated to the north of Mlawa. During the 1st and 2d, this force met strong Polish resistance in its

efforts to capture the town. German tank attacks were repulsed. During the night of 2-3 September, the main effort of the attack was shifted to the east, and the motorized elements of the army moved from the vicinity of Mława to Willenberg. This move caught the Polish forces unawares, and by evening of 3 September the Third Army had captured the important road junction of Przasnysz. This advance caused the Polish forces defending Mława to withdraw towards Warsaw.

During the 4th and 5th, the German troops continued their advance towards the Narew River, and by the evening of 5 September the left wing of these forces had reached Rozan, while the right wing had captured Ciechanów. The frontier line of Polish fortifications had been pierced, and contact had been made with the main defensive positions along the Narew River.

General von Brauchitsch, on 5 September, began a regrouping of his northern forces. Strong reinforcements (23d Division and 3d Panzer Division) were transferred to von Kuechler's Third Army for its attack on Białystok and Brest Litovsk, an operation from which the German high command hoped for decisive strategic results. These divisions crossed the Corridor in trucks and on foot during the 5th and 6th of September, and after reaching the East Prussian railheads, entrained for new concentration areas in the eastern part of East Prussia.

While the ground troops were gaining brilliant successes, the German Air Force was playing a most important part. It opened its attack at dawn on 1 September with a mass bombardment of the ground installations of the Polish Air Force. During the next three days every known Polish airdrome was repeatedly bombed. So devastatingly efficient was this all-out air offensive that the Polish Air Force ceased to exist before it had had an opportunity to function. As early as 3 September, the weight of the German air attack was shifted to the railroad lines west of the Vistula, in order to prevent the use of these lines for the regrouping and withdrawal of the Polish forces, and by 5 September air attacks were being directed against Polish troop columns. During this period, also, most of the known Polish aircraft factories were destroyed, as well as the large ammunition works at Sandomir.

**The Exploitation, 6-8 September (Map 4).**—We next turn to the renewed operations of the ground and air forces for the period 6-8 September, during which the Germans exploited their successful penetrations.

From the west and south of Cracow, General List's Fourteenth Army moved rapidly northeast and east against the retreating Polish Cracow and Przemyśl Groups, which were striving to reach the San River line without offering decisive battle to their pursuers. There are indications that Polish GHQ at Warsaw, even this early in the campaign, had lost touch with its southern groups, and that, in consequence, the commanders of these groups were left to act on their own responsibility.

On 6 September, the Marisch Ostrau attack group captured Cracow, the principal city of southern Poland. No opposition was offered. The Zips attack group occupied Nowy Sącz and pushed on toward the Wisłoka River. On 8 September the Galician towns of Tarnów and Gorlice were taken and a bridgehead seized at Debica on the east bank of the Wisłoka.

The Tenth Army, on the evening of 5 September, lay stretched out on a broad front of some seventy miles from Piotrków to Chełm. A panzer corps under Hoepner was concentrated around Piotrków, while the other panzer corps of the army, under Hoth, stood on the right flank observing the enemy divisions to the south around Cracow and guarding against a hostile attack from that direction.

The Polish divisions of the Silesian Group, which had opposed Reichenau's initial assault, were on this day withdrawing northward toward Łódź, while the four reserve divisions of that group, originally near Tomaszów Maz., were returning eastward towards the Vistula with the intention of halting a German pursuit along the line of the Lysa Góra Hills in front of Radom. This eccentric withdrawal opened up a gap in front of Reichenau's left wing and center. Between Piotrków and Warsaw no Polish force of any strength opposed Reichenau's advance. The best paved road in all Poland stretched between the two cities. At Piotrków, Hoepner's powerful panzer corps stood ready. A situation had developed which permitted mechanized troops, for the first time in history, to show their strategic capabilities.

Reichenau's advance on the 6th, 7th, and 8th assumed the character of a headlong race. Hoepner's panzer corps reached Tomaszów Maz on 6 September. From this city the advance continued toward Warsaw. One mechanized column captured Rawa Mazowiecka on the 7th, and reached the southwestern suburbs of Warsaw by the evening of the following day. The right column of the panzer corps took a more easterly route, via Góra Kalwaria and thence along the west bank of the Vistula. This column also reached the outskirts of Warsaw on the evening of the 8th. Neither column, however, was sufficiently concentrated to undertake the occupation of the city,

although resistance at first appeared to be slight and unorganized. Hoepner's corps had far outstripped the Tenth Army's infantry divisions, which on this evening were reported to be some seventy miles in rear of the mechanized units. Caution was called for. Very strong and undefeated Polish forces were believed to be located in and around Lodz, threatening the left flank and rear of the panzer corps.

Hoepner's penetration had altered the strategic situation. Strong elements of the Thorn, Posen, and Silesian Groups lay to the west of this German wedge. From this time on the further retreat of these troops was to be a difficult operation. Poland's military situation was desperate, and only a miracle could postpone the destruction of her forces.

While Reichenau's left wing was advancing on Warsaw, his center and right continued to advance in the direction of the Lysa Gora Hills and Radom. The important city of Kielce was taken on the 6th, and by the 7th the army was engaged in a frontal battle with the 3d and 12th Polish Divisions in and around Skarzysko Kamienna. The 19th and 29th Divisions of this Polish group were on this day withdrawing from Tomaszow Maz through Radom to the safety offered by the Vistula River.

The withdrawal of the Polish Cracow Group from Cracow eastward had relieved General Hoth's panzer corps of the necessity of further protecting Reichenau's right flank, which was no longer in danger. Reichenau's mission was now to prevent the successful withdrawal of the enemy's divisions at Radom and in the Lysa Gora Hills. Hoth's panzer corps, concentrated to the southeast of Kielce, was directed to advance along the west bank of the Vistula in the general direction of Zwolen and to cut the lines of Polish retreat between Radom and the river. The advance of the corps was extremely rapid. It captured both Zwolen and Radom during the afternoon and evening of the 8th. This movement cut across the line of retreat of four Polish divisions.

The advance of the Eighth Army (Blaskowitz) during this phase of the operations continued in a northeasterly direction without important incidents. On the 6th and 7th of September, advances of normal depths were made from the Warta bridgeheads. On the 8th, the army passed on both sides of Lodz, without, however, occupying the city, and towards evening reached Ozorkow and Brzeziny.

During this advance the 30th Division marched echeloned to the left flank of the Eighth Army, so as to prevent interference with the army's movements by the strong Polish forces known to be located in the province of Posen. It is noteworthy that, on the 8th, Blasko-

witz was entirely unaware of the fact that a strong Polish force of about five divisions, which had begun to withdraw from Kalisz, Posen, and Thorn, was fast approaching the army's left flank. The failure of the German intelligence service to function on this occasion was to result in the grave crisis which befell the Eighth Army during the succeeding week. It was momentarily to threaten the success of the entire German plan of campaign.

The German Fourth Army, which had been weakened by the transfer of some of its troops to the Third Army, continued its advance on both sides of the Vistula River. By 8 September, the III Corps, operating on the right of the army, had advanced close to Honensalza, pushing on the heels of the Polish forces withdrawing from Posen and Thorn on Warsaw. On this same day the II Corps, moving along the east side of the Vistula, had captured Strasburg and had crossed the Drewence River. Only weak detachments barred the further advance of this corps on Modlin.

By the night of 5 September, the striking force of the Third Army (von Kuechler) stood in two groupments, one at Ciechanow and the other facing Rozan on the Narew River. Up to the 5th, the direction of attack of the army had been due south, towards Modlin and Warsaw. However, it had been the intention of the army commander from the outset not to run frontally against the fortifications protecting the Polish capital on the north, but rather to drive southeastward over the Narew and Bug Rivers toward Siedlce, a city fifty miles east of Warsaw, the capture of which would result in isolating the Polish capital. During 5 September, the troop movements necessary to effect this change of front were in progress.

The Narew was crossed on 7 September at Pultusk and Rozan, and on the 8th the German pursuit towards the Bug River, in the direction of Wyzkow and Brok, was initiated. This forcing of the Narew was an important success and profoundly influenced the entire strategic situation. The line of the Narew was the only Polish defensive position north of Warsaw, and on its retention depended the ultimate fate of both the Polish capital and the whole Vistula position. Once across the Narew, the road into the interior of Poland was open to the Third Army. The crossing of the river started the sequence of events which led to the surrender of Warsaw and the Polish field forces.

While the Narew was being crossed, a new and strong concentration of the Third Army was being effected in the area Lyck-Johannisburg, preparatory to advancing in the directions of Bialystok and Brest Litovsk. However, the movement of this force across the frontier did not take place until 9 September.

During the period 6-8 September, the German Air Force continued its operations against the Polish air fields and the communications system of western Poland. Repeated heavy bombing attacks were made against the railroads leading from Thorn, Posen, and Kalisz toward the Polish capital. The object of these attacks was to retard the regrouping of the Posen and Thorn troops, which were known to be attempting to retire eastward.

On the 8th, the German Air Force struck a telling blow by destroying the Vistula bridges near Deblin. This added further to the difficulties of the four Polish divisions near Radom, whose retreat to the Vistula was already menaced by General Hoth's panzer corps.

On 8 September, the main Polish forces west of Warsaw were in a critical situation. With transportation and communication facilities destroyed by the German Air Force, these confused and harassed divisions were now at the mercy of their opponents, who proceeded to close the already partially drawn net.

**The Encirclement, 9-14 September (Map 5).**—The operations of the Fourteenth Army (List) during the period September 9-14 took on the character of a pursuit. Nowhere did the Polish divisions of the Cracow and Przemysl Groups seek to offer strong resistance. By the evening of the 8th, the troops of the Fourteenth Army had reached the general line Gorlice-Debica-Pinczow. In their front the Polish units were seeking to withdraw to defensive positions behind the San River. This withdrawal, which was not everywhere carried out in an orderly manner, was made in two directions. The Cracow Group adopted a northeasterly direction of retirement toward Chelm, in order to defend the lower San and the Vistula from Zawichost to Lezajsk; the Przemysl Group, on the other hand, retired due eastward in the direction of Lwow, so as to bar the upper San River to the German pursuers. The latter group now consisted of but two divisions.

The advance of the Fourteenth Army during this period was exceptionally rapid. It appears that the two mechanized divisions of the army cut loose from the foot divisions and sought to take advantage of their high speed to seize the San crossings before these could be organized for defense.

On the 9th and 10th of September, the Fourteenth Army seized crossings over the San at Radymno, Jaroslaw, and Sanok and during the next three days pursued the retreating Polish forces with increasing speed. On the 12th, the army's right wing reached Sambor and sent forward towards Lwow a strong detachment of infantry in requisitioned trucks. Mechanized units, coming from Przemysl,

reached the outskirts of Lwow on the same day. For the next few days a series of confused battles occurred in the environs of that large city. Thirty miles to the west, two Polish divisions seeking to retire to the east were intercepted near Grodek and their retreat brought to a standstill.

To the northwest of Lwow, mechanized units succeeded, on 13 September, in getting across the Lublin-Lemberg highway at Tomaszow and Rawa Ruska. The main elements of the Polish Cracow Group were on this day in the vicinity of Bilgoraj, along the east bank of the San, far in rear of these German mechanized forces.

The seizure of the San River line was an important strategic success for the Germans. This was the last suitable defensive position in southern Poland. Eastern Galicia now stood defenseless before the German invader, and the retirement of the Polish forces in the south to Rumania was no longer possible. Nothing remained for the Cracow Group at Bilgoraj but to seek to continue its retreat to the northeast, in the hope of finding temporary respite in the roadless and resourceless Pripet Marshes.

During the period 9-14 September, the Tenth Army (Reichenau) fought in two distinct combat groups in far-separated areas. The left wing of the army suffered a check in its first efforts to capture Warsaw, and then participated with varying fortune in the desperate battles fought by the Eighth Army against the Polish forces that were seeking to cut their way through to the capital. During these days the right wing of the army was engaged seventy miles to the south and won an annihilating victory at Radom, where four Polish divisions were surrounded and captured. The operations of this wing of von Reichenau's army furnish a most interesting example of the German use of mechanized units. On 8 September, as already noted, General Hoth's panzer corps had cut across the line of withdrawal of the 3d, 12th, 19th, and 29th Polish Divisions at Radom and Zwolen, barring their retreat across the Vistula. This interception did not, however, insure the destruction of these units. The panzer corps was not strong enough to force the surrender of over 60,000 men. Assistance was necessary. This was provided by the pursuing German foot divisions, which were enacting the role of the direct-pressure force in the pursuit. During the 9th and 10th, the encirclement of the Polish divisions was completed, and these troops, after futile efforts to break the ring, surrendered on the 12th. A few stragglers alone succeeded in finding their way across the Vistula.

The action on the front of Reichenau's left wing did not progress so favorably for the Germans. The efforts made by detachments of Hoepner's panzer corps to capture Warsaw were repulsed, and be-



fore reinforcements could arrive in sufficient numbers to launch a determined attack against the city, developments on the front of the Eighth Army made it imperative to move all available troops from the Tenth Army to reinforce the former.

On the evening of 8 September, the columns of the Eighth Army (Blaskowitz), after passing Lodz to the east and west, had reached Ozorkow and Brzeziny. Lodz itself, according to the plan, was not to be occupied until the 9th. The army commander hoped to seize the line of the Bzura on the next day and thereby to carry out his mission of protecting the left flank of the Tenth Army. Polish units were known to be in and around Kutno and along the Bzura. These forces, however, were gravely underestimated. The German high command estimated the strength at five infantry divisions and two cavalry brigades; the actual strength was twelve infantry divisions and two cavalry brigades. Over half of these units had not been engaged. They outnumbered the Eighth Army by more than two to one.

From the opening day of the campaign, General Blaskowitz had carefully watched his left flank. He had echeloned the 30th Division behind his left-flank corps. As events developed, this disposition proved to be the army's salvation.

Early on the 9th, the Eighth Army took the offensive against the line of the Bzura. Vague as was the situation on the army's front, Blaskowitz was merely following the German military doctrine, which is that in a doubtful situation the offensive is the best policy.

The initial attacks of the German Eighth Army were successful in spite of heavy casualties. Soon, however, Polish strength asserted itself. The forward progress of the Germans was stopped, and Polish counterattacks began along the entire front. On the German left, in the zone of the 30th Division, a crisis developed. Five Polish divisions struck this unit in flank, cut off its advance guard, and forced it to withdraw.

The situation was saved by three German counteractions. The Tenth Army diverted every available man and tank from the vicinity of Warsaw to the zone of Blaskowitz's army. The Polish attacks were stopped by these reinforcements. As a second measure, reserve divisions following closely on the heels of the Eighth Army were rushed into action. Finally, strong bombardment elements of the German Air Force were taken off their strategic missions and launched against the Polish ground forces facing Blaskowitz. By 15 September, all danger to the Eighth Army had passed and the Germans resumed the offensive.

The operations of the Fourth Army (von Kluge) during this period consisted principally of marching. On the 8th, this army was divided into two groups, one on each side of the Vistula. One group, consisting only of foot divisions, moved southeastward in a series of forced marches to join in the great battle raging between Kutno and Lodz. By the 15th, this group was approaching the former city and was preparing to assist the efforts of the Eighth and Tenth Armies. By the evening of the same date, the daily advances of the other group had placed it in front of the fortress of Modlin, from which it effectively blocked the retreat to the north of the Polish forces around Kutno.

By 8 September, the Third Army (von Kuechler) had forced the fortified line of the Narew River between Pultusk and Rozan. During the succeeding days the army exploited this success and moved against the rear communications of Warsaw. By the 12th, the railroad lines leading from that city to Bialystok and Siedlce had been cut. By the 14th, a line of investment opposite the capital city had been occupied and its encirclement completed. One Polish division had retreated in the direction of Siedlce, followed by elements of the German Third Army.

The second major operation of the Third Army commenced on 9 September. On this day the strong group of divisions which had assembled in the Lyck-Johannisburg area moved on Brest Litovsk. The advance of this force was weakly opposed, and by the 14th it had captured Brest Litovsk. Small Polish forces in the area were either cut up or captured. Any possibility of a Polish stand east of Warsaw was ended by this maneuver.

During the encirclement of the Polish forces by the ground troops, the German Air Force, as in the previous period, carried out a series of large-scale bombardment operations designed to paralyze the entire railroad net east of the Vistula and to prevent the transport westward by rail of the reserve units known to be completing their organization in eastern Poland. These operations were interrupted between the 11th and 14th of September by the diversion of squadrons to the assistance of the hard-pressed Eighth Army north of Lodz.

**The Annihilation, 15-28 September (Map 6).—**The final phase of the campaign deals with the annihilation of the trapped Polish divisions. It was during this period that Poland was invaded from the east by Russian armies. However, this invasion did not have an important effect on the final outcome of the campaign. At the time the invasion began, Polish resistance had been completely broken and all avenues of retreat had been blocked.

By the evening of 14 September, the center group of the Fourteenth Army (List) had reached, with its advanced mechanized elements, the outskirts of Lwow and had placed a thin outpost line around three sides of the city. The right wing of the army was in the vicinity of Sambor. The bulk of the mechanized forces, functioning as the advance guard of the left wing, were across the Lublin-Lwow highway between Tomaszow and Rawa Ruska.

The Polish forces in Galicia, already half demoralized by their long retreat and much weakened by straggling, stood in two main groups. The larger, comprising some five infantry divisions and a mechanized brigade, was slowly withdrawing to the northeast and by the 15th was along the San River to the southeast of Sandomir. The smaller group, composed of two infantry divisions, lay between Przemysl and Lwow. The further withdrawal of this latter force to Lwow had been blocked by the German mechanized forces near that city. Its line of retreat to Rumania had been barred by the German detachments in Sambor.

On the 16th, serious fighting began between the left wing of General List's army and the strong Polish Cracow Group around the town of Bilgoraj. The Polish withdrawal had been intercepted by German mechanized troops in the region between Zamosc and Chelm, and German infantry divisions had come up from the west and southwest to join in the fighting. The battles around Bilgoraj, in which units of von Reichenau's army participated, continued until the 20th. On that day some 60,000 Poles laid down their arms, among them the commanding general of the Polish groups of the south, General Pekor. Remnants of this Polish force eluded the German net, only to fall victims to the advancing Russian armies a few days later.

Of the Polish Przemysl Group, some 10,000 were captured near Rawa Ruska on the 18th. Small detachments of this force escaped to the southeast and, eluding the Russians, reached safety and internment in Rumania and Hungary.

On the 17th, scouting elements of the motorized reconnaissance battalions of General List's army made contact with similar units from General Kuechler's army near Wlodawa. This junction completed the first stage of the outer double envelopment of the Polish forces. The outer net was still but a thin screen and might have been penetrated by any Polish attack in force. The surrender of the Polish troops at Warsaw, Kutno, and Bilgoraj made the outer net unnecessary, but its existence shows the thorough indoctrinization of the German high command in the principles of annihilation laid down years before by Count von Schlieffen.

The Tenth Army (Reichenau), during this phase of the operations, continued to fight in two groups. While the left wing of the army cooperated with General Blaskowitz's Eighth Army and a part of General von Kluge's Fourth Army in forcing the surrender of the Polish forces between Kutno and the Bzura, the right wing continued its advance towards Lublin, an advance initiated on the 13th when bridgeheads across the Vistula had been established near Pulawy and Annopol. It was a part of this wing that assisted the troops under List in forcing the surrender of the Polish units at Bilgoraj.

The concentric attack of the German armies on the Polish forces surrounded near Kutno began on the 15th. The Tenth Army attacked west from Warsaw. The Eighth Army pressed from the south against the line of the Bzura. The right column of the Fourth Army advanced southeast from Wloclawek on Kutno. Other forces of the Fourth Army stood along the north bank of the Vistula from Plock to Wysogrod, barring a Polish withdrawal across the river.

This concentric attack by large German forces rapidly broke all Polish resistance. All efforts to break out of this ring of fire proved futile. By the 17th, the Polish forces had been pressed together into a very narrow area between the Vistula and the Bzura southwest of Wysogrod. There, harassed on all sides by the ever-increasing pressure of the encircling forces and bombed from the air by the German Air Force, 170,000 Poles laid down their arms in one of the greatest surrenders of a field army in all military history.

While this gigantic battle of annihilation was being brought to a close west of Warsaw, units of the German Third and Fourth Armies were drawing tight the lines of blockade around Warsaw and Modlin; and to the east, near Siedlce, other elements of the Third Army were rounding up Polish forces seeking to escape to the southeast. In this area, 12,000 officers and men of the Polish 1st Division were forced to surrender.

The air operations during this phase were much less extensive than in previous periods, but were nevertheless important. Bombing expeditions were carried out against Polish troop concentrations and columns in the regions east of the Vistula. The airfields adjoining the Russian border were extensively bombed, and the last remaining Polish radio stations were destroyed. As already noted, the German Air Force also played an important role in the last phase of the Battle of the Bzura, bombing enemy troops and spreading the demoralization that was fast seizing the Polish forces in this area.

The only Polish troops at large on 20 September in the German-occupied portion of Poland were: the garrison of Warsaw; the garrison of Modlin; the naval garrison of the Hela peninsula;

small forces in Lwow; and a considerable number of Polish units, mostly reserve formations, in the area between Deblin and Lublin.

Lwow surrendered on 21 September. On 22 September, the German forces in this region began a withdrawal to the San River in accordance with an agreement with Russia. The naval garrison on the Hela peninsula surrendered on 1 October.

Of particular interest during this final phase of the campaign is the capture of Warsaw and its sister fortress, Modlin. On 22 September, Blaskowitz and von Kuechler were beseiging Warsaw from their positions on the two sides of Vistula, while Strauss with a special group was operating against Modlin. On this day, both Blaskowitz and von Kuechler delivered a successful series of limited attacks, drawing in their siege lines about the city.

Commencing on the 24th, an intense artillery and aerial bombardment was loosed on the capital and continued unabated until the 27th. It is reported that as a result of this bombardment about 20 per cent of all the houses in Warsaw were destroyed and that about 60 per cent received one or more hits.

On 25 September, a coordinated infantry attack was made against the city. The following interesting account is an extract from the report of an American officer who visited the field of battle immediately after the fall of Warsaw. It describes attacks on an antiquated fort line along the western outskirts of the city near the suburb of Mokotow:

Another interesting action was the attack of an infantry regiment, reinforced with one regiment of light and one battalion of medium artillery, against the southern part of Warsaw, through the suburb of Mokotow.

This attack was described in much detail by General Gallwitz, the regimental commander, who had been promoted to general in recognition of his conduct of the attack. He took us over the ground, largely on foot, and pointed out even individual houses that had been stubbornly defended.

Mokotow, with an old fort lying about 1,500 yards west thereof, was a completely fortified area. A deep ditch connected the town with the fort. This ditch served as a tank obstacle to protect the areas between the two against tank attacks, and also as a covered route to transfer troops from one to the other.

A main road entered the town from the southwest, each side flanked by separate villas constructed of stone and bricks. Toward the center of the suburb the buildings became larger, up to four stories high and fifty yards square, and included such buildings as a hospital and apartment houses. Much of this construction was new and of concrete.

The Poles had organized each and every building for defense. Outside doors, as well as stairways, were barricaded from the

inside with sandbags. Holes were broken through the floors and roof and communication maintained by means of ladders. Where buildings had common walls, holes were broken through on each floor. One of these houses was the dwelling of a Peruvian diplomat.

Machine guns were so placed at street crossings that the intersecting streets could be swept with fire. Artillery was emplaced at the ends of streets so that the guns could fire point-blank down the street. Stone sidewalks were then torn up and used to build barricades across the streets. Streetcars were also used for this purpose.

Riflemen in pairs were placed in rooms behind sandbags, well back from windows. From such positions they could fire without being located.

Artillery was placed in parks and open squares all through the city so that it was screened from observation from the front. On 24 September, the German Air Force bombed all military objectives, first with explosives and then with incendiary bombs.

After a fifteen-minute artillery preparation, commencing at noon on 25 September, the German regiment attacked with two battalions in the front line. One battalion advanced astride the main road, leading from the southwest, with the right battalion east thereof. The approach led over cut grassland and potato patches, and was, for 500 yards, quite easy until both battalions were met by heavy well-aimed rifle fire from the edge of town. The fire could not be returned effectively because it was impossible to observe from where it was coming. The attack suffered considerable losses in continuing another 500 yards to the edge of the suburb itself. There it was brought to a complete stop by the heavy flanking fire coming from all directions from the houses.

In renewing the attack, the Germans either had to destroy each building by artillery fire or carry on operations with engineers and infantry against each house. After taking one, they had to cover each window of the next house with fire and then break through its walls. Several unsuccessful attempts were made with infantry heavy weapons to silence a Polish field piece, which was set up in strong earthworks so that it enfiladed a main street and was breaking up the whole attack of the battalion. It was finally necessary to bring up a 105-mm. gun to silence the field piece and allow the attack to proceed.

The Germans sustained exceptionally heavy losses in this action in spite of their strong artillery support. It shows again the great defensive value of towns and villages when properly utilized.

Under great difficulties, the attack continued about one kilometer farther into the town. At noon on the 27th, it was discontinued because of an armistice preceding the surrender of the city.

On 27 September, the garrison of Warsaw capitulated, and that of Modlin, no doubt influenced by the fall of the capital, followed suit. Forces in the area east of Deblin offered resistance until 5 October. The campaign in Poland was at an end.

## COMMENTS\*

Thus in about four weeks one of Europe's great armies was enveloped, disorganized, and annihilated. Yet from this campaign the major Allies profited but little. Military men, studying the conquests, condemned the Poles instead of recognizing German potentialities. Certain lessons, which now seem apparent, went unheeded; and France continued to make only halfhearted preparations behind her fortifications. Looking backward and commenting after the fact is always easy. Many men have been able to find fault with Napoleon, but no man has approached his achievements. Nevertheless, it is now apparent that certain lessons could have been learned from the conquest of Poland. It might have been realized that the offensive had again become the king of the battlefield; that Germany once more had a powerful, well-trained army, and that it was capable of turning the war into one of maneuver; that modern weapons, more than man power and fortifications, might be the proper index of a nation's combat power.

The erroneous impression has arisen from the rapidity with which it was concluded, and from the overwhelming success of the German Army, that the campaign was little more than a maneuver which failed to afford a real test of German battle efficiency. This view neglects the fact that the German casualties, as officially published, were over 10,000 killed, 30,000 wounded, and 3,000 missing. When it is remembered that the most of the casualties were incurred within a period of eight days, the campaign in Poland can be recognized as a major military operation in which the Polish Army offered a stubborn resistance, and which required a major effort on the part of Germany.

Although the Polish plan was faulty in its strategic conception, the complete collapse of the defense was due not so much to poor strategy and leadership as to the overwhelming superiority of the Germans, who broke Polish resistance during the first four days of the campaign and prevented the Poles from carrying into execution their plan to make a final stand behind the Vistula. Further, this remarkable success of the Germans was not due solely to the Air Force and the mechanized troops, but must be ascribed to a field force with a balanced organization and a balanced armament, executing a plan under excellent leadership. Like the backfield of a football

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\* A number of these comments have been taken almost verbatim from material prepared by the Military Intelligence Service of our War Department.

team, it was the Air Force and the mechanized troops that received the publicity ; but, like the line, it was the German infantry that bore the brunt of the attack.

It would be unfair at this time, with only incomplete evidence at hand, to condemn too severely the strategy of the Polish high command. We do not know for certain whether it was the intention to accept battle at the frontier or merely to fight a series of delaying actions and then withdraw to the strong Narew-Vistula-San River line. In either case, however, it would appear that the Poles are open to criticism. For them to offer to meet the German Army in open warfare, on equal terms, suggests that either the Polish intelligence service had been seriously deficient, or that GHQ had made a faulty estimate of the worth of the German Army. If it was the real Polish plan merely to fight a series of delaying actions along the frontier and then to withdraw to the Vistula, a very strong case can still be made against the initial troop concentrations. Only one division was held originally on or in rear of this final line, while 95 per cent of the entire Polish Army took post along or closely in rear of the frontier. The dispositions actually adopted suggest that the Polish war plan envisaged a cordon defense.

Of the fifty German divisions used on the Polish Front, ten were mechanized, four were motorized, three were mountain, and thirty-three were infantry divisions. These figures show that the extent of the mechanization of the German Army has been greatly exaggerated. In some of the later campaigns the proportion of infantry divisions was even greater. The Germans believe, and this belief was justified in Poland, that no mechanization and motorization has yet been able to give the same degree of tactical mobility and flexibility on the field of battle that foot soldiers possess.

In general, the infantry divisions attacked on broad fronts, each division within the corps being assigned a zone of action and an objective. Within the division zones of action the advance was conducted by reinforced regiments. These reinforced regiments (called "march combat groups"\*) , operating almost independently, were largely responsible for the rapidity of the German advance.

After the First World War, many officers of the German Army believed that the infantry division as then constituted was too large and unwieldy for open warfare, lacking sufficient strategic as well as tactical mobility. Too many small divisions would complicate the supply system ; so a compromise was arrived at by which the comparatively large infantry division was retained, but with an organ-

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\* Called "regimental combat teams" in our Army.



ization which permitted its division into three groups, each provided organically with sufficient striking power to make it almost an independent command. The entire division could, of course, be assembled for concerted action. While the trains were motorized, the combat elements retained much of their horse-drawn transportation.

In the tactical employment of the German division, the march combat group is retained until enemy resistance necessitates employment of the division as a whole, when all the attached troops immediately revert to division control. This is particularly true of the artillery, which is almost invariably employed under direct control of the artillery commander, once the division is committed to concerted action.

German tactical doctrine and training stress the responsibility for individual leadership and initiative of subordinate commanders. Each combat unit is organized and armed to provide for both fire and movement. In battle, appropriate objectives are assigned to each unit, and subordinate troop leaders accomplish their individual tactical missions with a minimum of interference from higher commanders. Written orders in the division are rare. It was to this tactical doctrine and training that the extraordinary speed of the German attack can largely be attributed. Again to quote from Clausewitz: "Happy the army in which the untimely boldness frequently manifests itself; it is an exuberant growth which shows a rich soil. Even foolhardiness, that is, boldness without an object, is not to be despised . . ."

No discussion of the German ground forces would be complete without reference to the remarkable marching ability and superb physical condition of the German soldier. An infantry division of the II Corps, crossing the Corridor, marched 45 miles against enemy resistance and forded the Vistula in a period of three days. Later this same unit marched 31 miles per day for three successive days.

In contrast with their later use in succeeding campaigns, the employment of panzer divisions on the Polish Front was conservative. As far as is known, in only two instances—in the Teschen area and in the attack of the fortified line of Mława—were tanks used in a coordinated attack with the infantry. It is not known whether these supporting tank units were from armored divisions or from the independent tank regiments that were available. Employing the soft-spot tactics of von Hutier, the German infantry divisions located weak spots and created gaps. The mechanized and motorized forces were then sent through the gaps in the execution of what were formerly called "cavalry missions." They exploited the break-through by attacking the flanks and rear of the Polish divisions, disrupting

their communications, preventing their taking up delaying positions, and cutting off their retreat to a final defensive line. When on these missions, the mechanized divisions would operate far in advance of the infantry, at times as much as 30 or 40 miles in rear of the Polish front line.

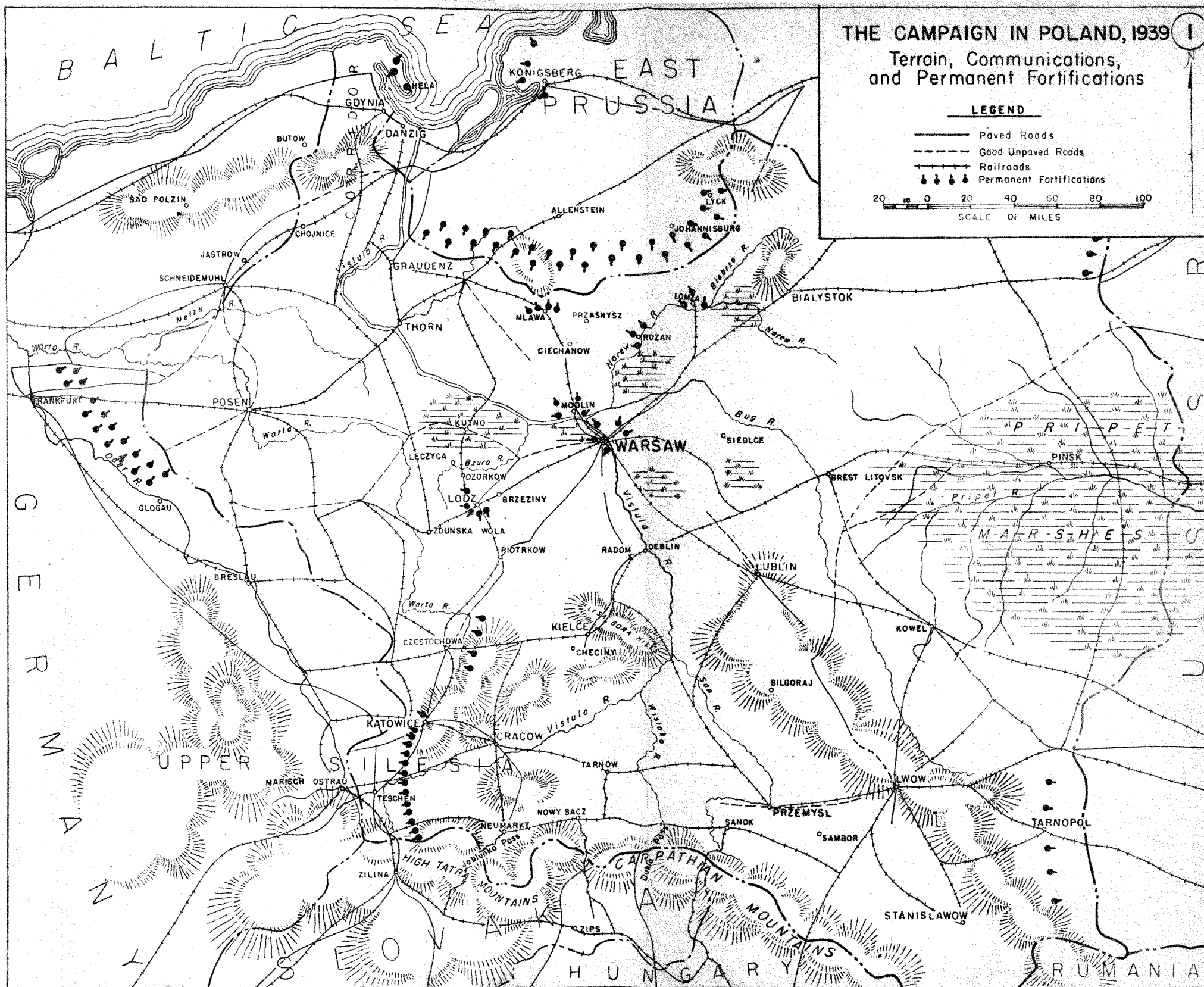
In the Fourteenth Army on the south and in von Reichenau's Tenth Army, it is known that the mechanized and motorized divisions were organized into corps consisting of one or two mechanized divisions and a motorized division. Organically, the panzer division contained sufficient reconnaissance and security troops to seize terrain features along the route of advance, and sufficient infantry and artillery to occupy and hold the terrain taken. In the tank columns themselves, close artillery support was furnished by the medium tanks, armed with either the 37-mm. or 75-mm. gun and having the same maneuverability as the light tanks.

German tank units had enough organic transportation to make them self-sufficient. Gasoline was supplied to combat units in five-gallon tins. These containers, about two feet high and cylindrical in shape, were made of an extremely hard but light metal. Extra containers were carried on the tanks and when empty were dropped off along the road to be picked up by the trains. When the tank units of the Tenth Army first arrived at Warsaw, they were completely cut off for several days, during which time they were supplied by air, the gasoline containers being dropped from planes.

As already noted, the German Air Force contributed to both the strategical and tactical success of German arms in Poland. The Polish air arm was completely neutralized from the outset. After a few days it was no longer a factor. Rail lines were interrupted when and where the German high command desired. This continuous bombardment prevented the completion of Polish mobilization. Telephone and telegraph lines were cut by bombing. Polish military headquarters, which were thus forced to use radio, were soon located and bombed. Civil as well as military control broke down rapidly, owing to the destruction of rail and wire communications. During the entire campaign, air observation units provided the German Army with as complete information of its own and enemy troops as could be expected. Special airplanes for liaison work in friendly territory performed valuable service by disseminating information and orders to German troops. The use of dive-bomber units on the field of battle against Polish reserves and the extensive employment of bombardment squadrons against retreating Polish columns contributed materially to the final result. The integration

of the Air Force into the combined German military effort was so complete that its operations cannot be identified as decisive, but rather as indispensable in hastening the ultimate issue of battle.

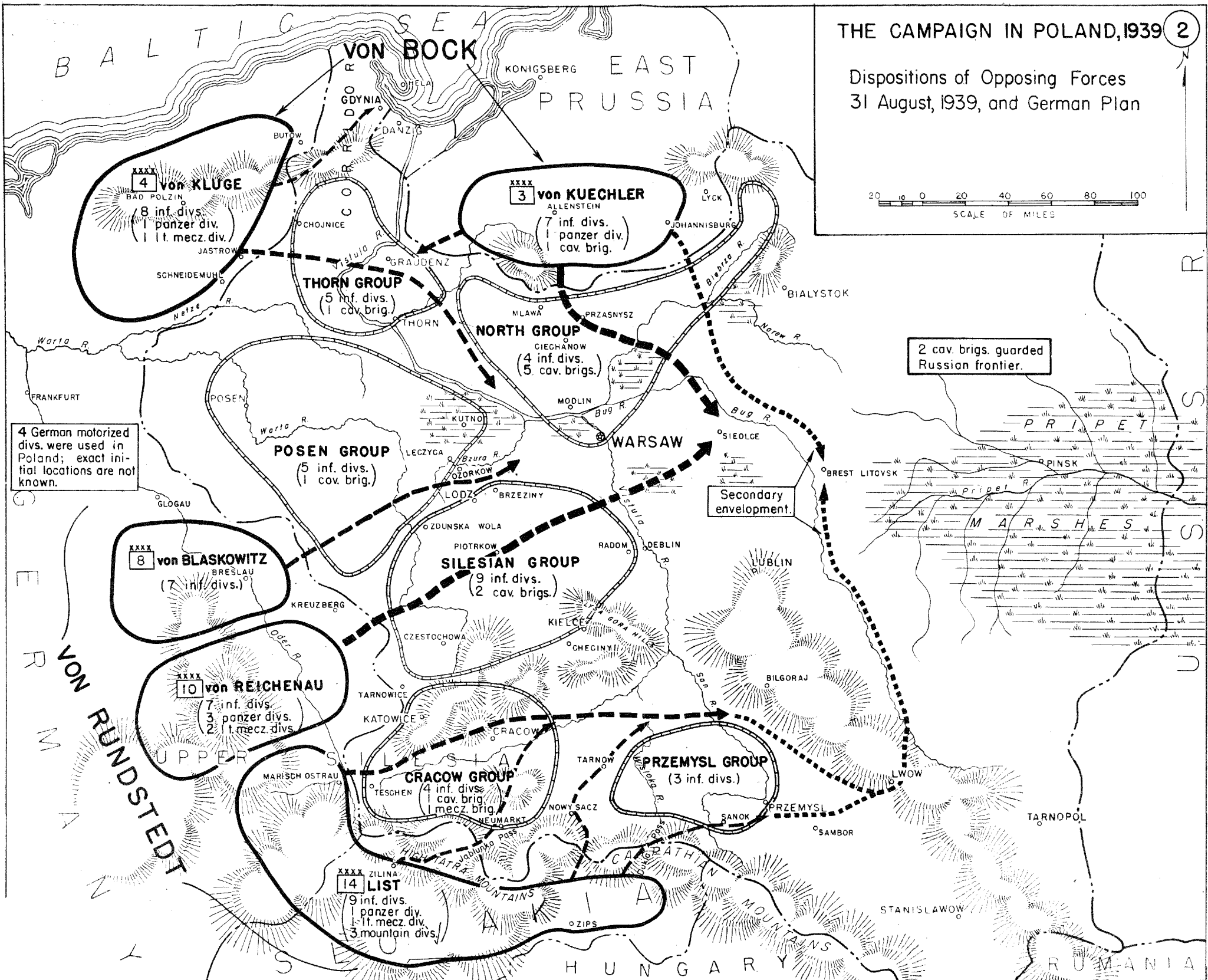
From the German viewpoint, a most important result of the Polish campaign was that they learned that their organization, armament, and tactical doctrine were correct. Especially was this true for the mechanized division, which received a thorough test. The First World War had indicated the tremendous striking force of an armored vehicle. The Spanish Civil War had demonstrated the necessity for heavier tanks, to be used in mass. The invasion of Austria and Czechoslovakia had solved the technical problems of supply and repair. The Polish campaign showed that the organization of the armored division was satisfactory, and that these divisions were capable of independent action. Now the stage was set for the next act, the break-through at Sedan.



# THE CAMPAIGN IN POLAND, 1939 2

Dispositions of Opposing Forces  
31 August, 1939, and German Plan

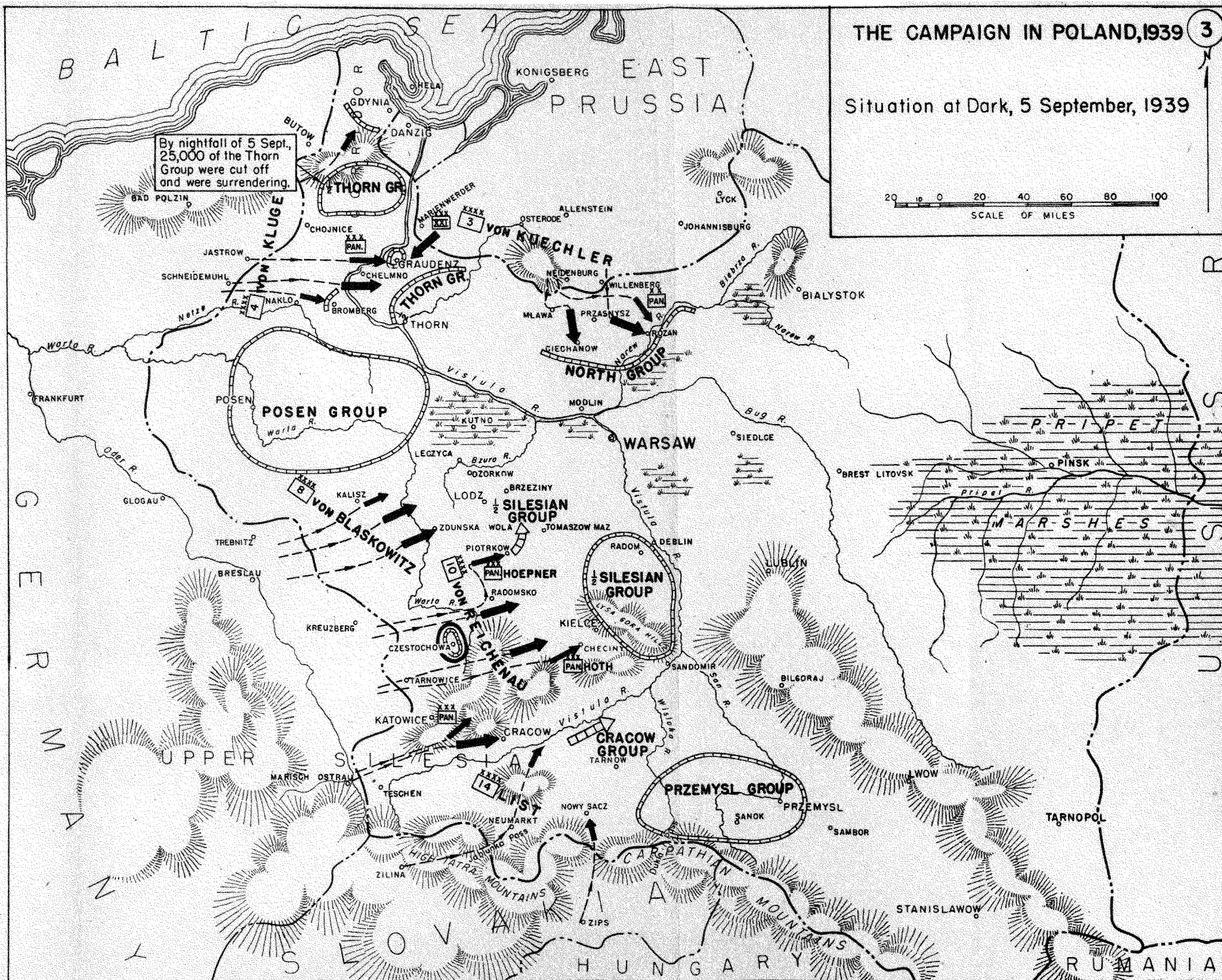
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# THE CAMPAIGN IN POLAND, 1939 3

Situation at Dark, 5 September, 1939

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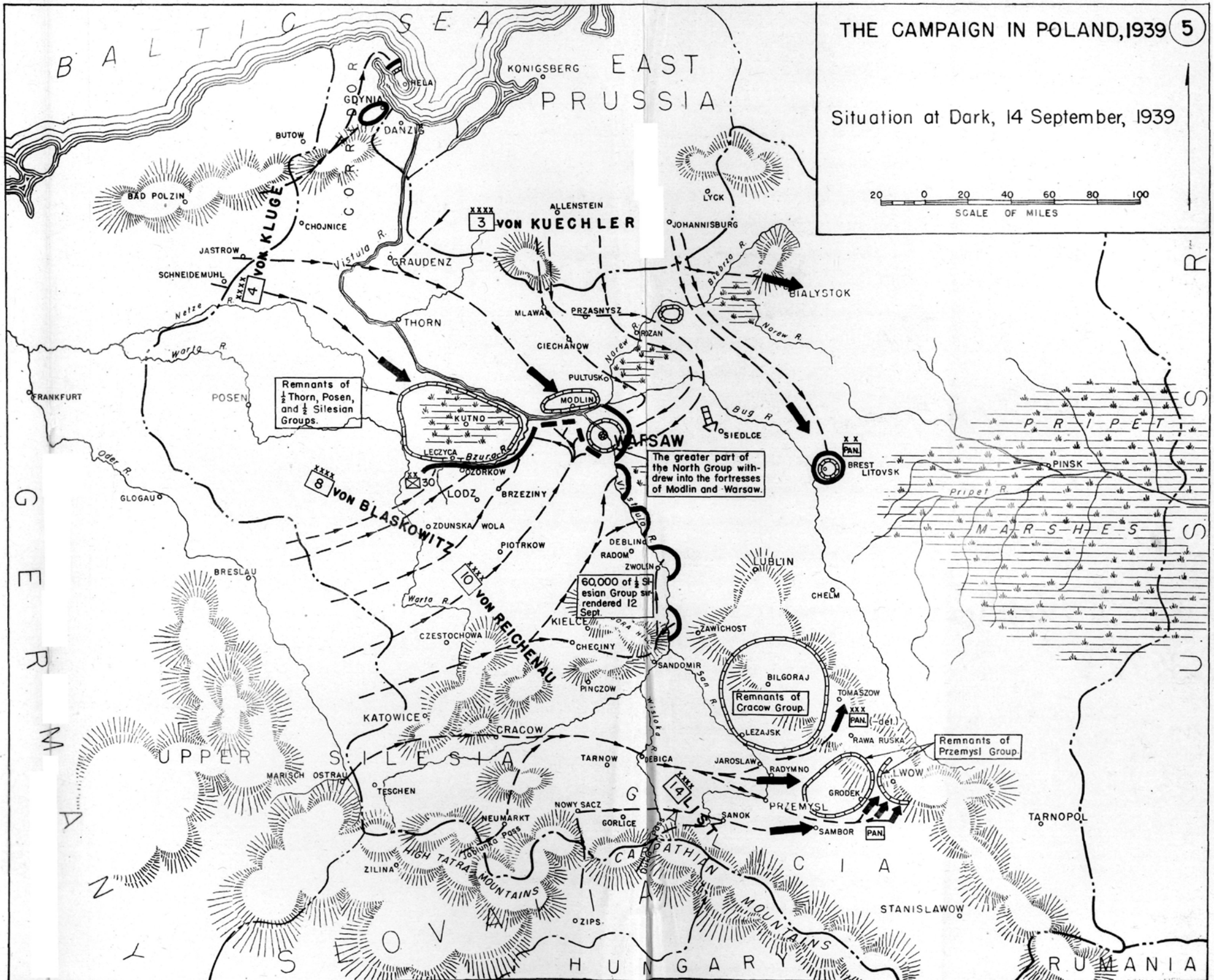
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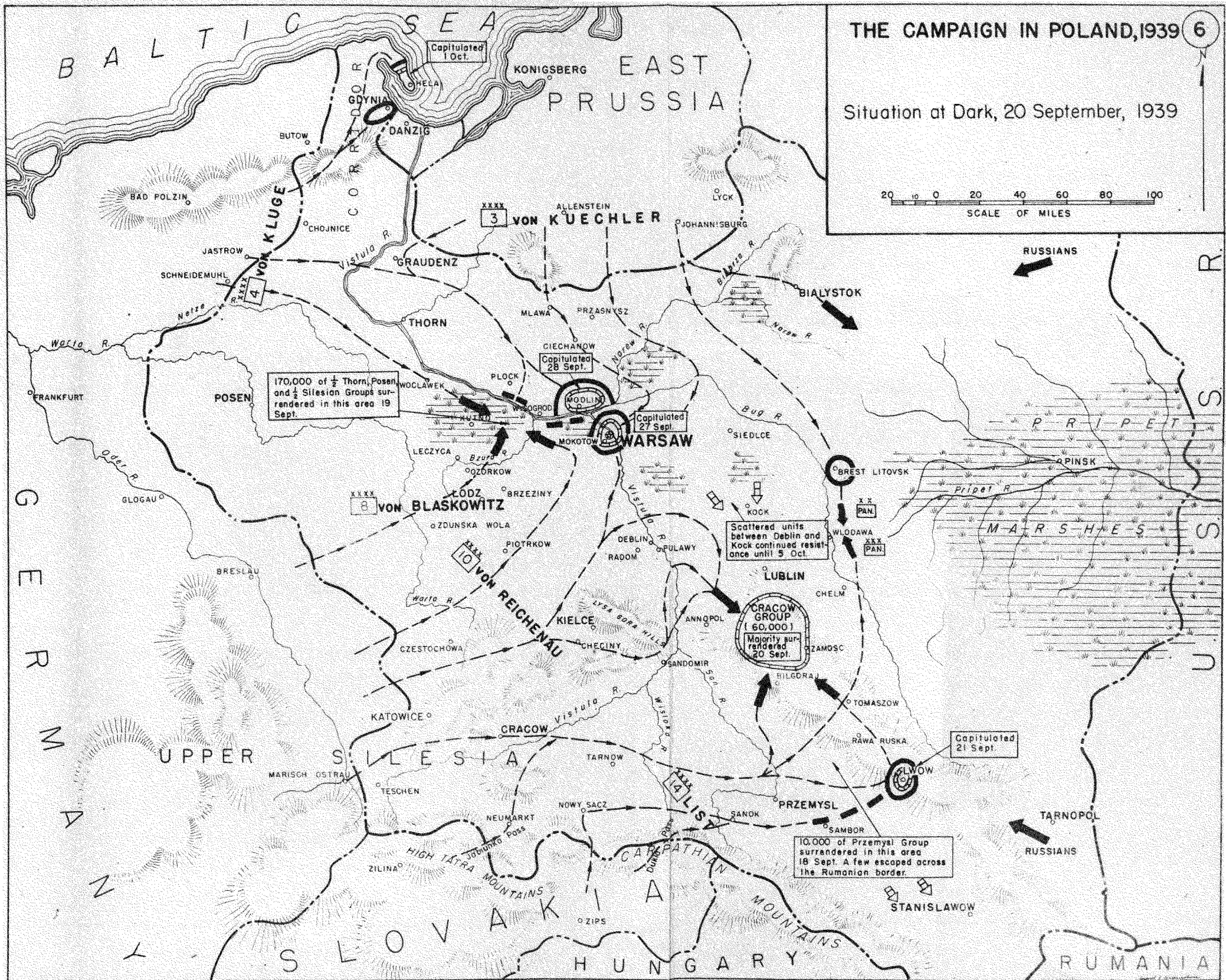
# THE CAMPAIGN IN POLAND, 1939 5

Situation at Dark, 14 September, 1939

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